

DOCUMENT RESUME

ED 219 304

SO 014 123

TITLE Geography and International Knowledge. A Report of the Committee on Geography and International Studies of the Association of American Geographers.

INSTITUTION Association of American Geographers, Washington, D.C.

PUB DATE Mar 82

NOTE 31p.; Figures may not reproduce clearly.

AVAILABLE FROM Association of American Geographers, 1710 Sixteenth Street, N.W., Washington, DC 20009 (\$2.50).

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.

DESCRIPTORS Business; Economic Development; Educational Objectives; *Geography Instruction; Global Approach; Higher Education; *Human Geography; *International Studies; Politics; Secondary Education; Urban Planning

ABSTRACT

This report illustrates how geography can play an important role in improving America's performance in international matters. The degree of interdependence among nations intensifies daily. Today world interaction affects everyone. For example, a frost in Brazil raises coffee prices in the United States and a strike in Africa's Copperbelt affects American metal producers. The United States is critically short of many strategic minerals and the political stability of the producing nations strongly influences our ability to maintain industrial and technological excellence. As the appetite for specialized imports by highly industrialized nations increases, serious environmental degradation may occur in the producing nations of the world. Most seriously affected are the marginal economies of the Third World. These complex intricacies of spatial interaction can be understood only with a sophisticated knowledge of geography. There are five major parts to the report, including an introduction. Part II examines the international characteristics of geography. It discusses the environment and society, maps and location, realms and regions, spatial interaction, and global perspectives. Part III examines the contributions of geographic curricula to international studies. Part IV presents some international applications of geography in business, in economic, urban, and regional development, and in international fields. Part V discusses geography in liberal education. (RM)

* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *

ED219304

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

This document has been reproduced as
received from the person or organization
originating it.

X Minor changes have been made to improve
reproduction quality.

- Points of view or opinion stated in this docu-
ment do not necessarily represent official NIE
position or policy.

"PERMISSION TO REPRODUCE THIS
MATERIAL IN MICROFICHE ONLY
HAS BEEN GRANTED BY

Salvatore Natoli

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

Geography and International Knowledge

A Report of the
Committee on Geography and International Studies
of the
Association of American Geographers

March 1982

Additional copies \$2.50

Order from
Association of American Geographers
1710 Sixteenth Street, N.W.
Washington, D.C. 20009

(202) 234-1450

50 014 123

Copyright 1982 Association of American Geographers

Published by
Association of American Geographers
1710 Sixteenth Street, N.W.
Washington, D.C. 20009

Cover photo: Frank Borman, NASA

FOREWORD

In 1965 Chauncy Harris wrote that one cannot see one's own country and culture in perspective until he or she has studied other lands and peoples. "In perspective" suggests the capacity to distinguish the significant from the insignificant, the important from the trivial, the enduring from the fleeting. He asserted that a liberal education should teach individuals that their countries, regions, and ethnic, religious, social, or linguistic groups are but one among many, and that other countries, regions, or social groups are not necessarily odd, irrational, or inferior. Geography plays a key role in citizen education for developing such a perspective today.

Former President Jimmy Carter's Commission on Foreign Language and International Studies pointed out in its 1979 report, *Strength through Wisdom: A Critique of U.S. Capability*, that American efforts have fallen short in international education and that our foreign policy, trade, and relations may be in jeopardy unless we redress these insufficiencies.

In the following report, the Association of American Geographers Committee on Geography and International Studies attempts to illustrate how geography can play an important role in improving America's performance in international matters. The degree of interdependence among nations intensifies daily. Today world interaction affects everyone: A frost in Brazil raises coffee prices in the United States and a strike in Africa's Copperbelt affects American metal producers. The United States is critically short of many strategic minerals and the political stability of the producing nations strongly influences our ability to maintain industrial and technological excellence. As the appetite for specialized imports by highly industrialized nations increases, serious environmental degradation may occur in the producing nations of the world. Most seriously affected are the marginal economies of the Third World. These complex intricacies of spatial interaction can be understood only with a sophisticated knowledge of geography.

Although our needs for geographical sophistication and understanding have increased, the level of geographical literacy in the U.S. remains appallingly low, especially in comparison with other highly industrialized nations. Evidence of questionable geographical literacy appears in everyday life, but it is even more serious when we find it in documents that report on international problems where we encounter mistakenly chosen map projections and uninformative thematic maps.

The authors of this report have attempted to demonstrate the need for improving our geographical literacy in order that we might deepen our knowledge and comprehension of international events and enhance our performance in international activities. The report outlines how the skills and tools of geography are essential for portraying and explaining the world in which we live. The global perspective of geography emerges as an invaluable context for international education, comprehension, and performance.

We would welcome your comments.

Salvatore J. Natoli
Educational Affairs Director
Association of American Geographers
Washington, D.C.
March 1982

GEOGRAPHY AND INTERNATIONAL KNOWLEDGE

Summary of a Report of a Committee of the Association of American Geographers

Never before have problems of the world been more pressing or the need for Americans to be informed about that world more urgent. Reports such as *North-South: A Program for Survival*, *Overcoming World Hunger*, and *Global 2000* underline the urgency of many international issues. The importance of Americans understanding international relationships and the deficiencies of our knowledge and training have been emphasized by other reports such as *Strength through Wisdom: A Critique of U.S. Capability*, by the President's Commission on Foreign Language and International Studies, and *A Survey of Global Understanding*, by the Educational Testing Service.

A Committee on Geography and International Studies of the Association of American Geographers reports that geography can contribute to international understanding by analyzing—

- The relationships of societies, cultures, and economies around the world to specific combinations of natural resources and of the physical and biological environment;
- The importance of location of places with respect to one another, as depicted on appropriate maps;
- The diversity of the regions of the world;
- The significance of ties of one country with another through the flow of commodities, capital, ideas, and political influence; and
- The world context of individual countries, regions, and problems.

According to the report, geographic curricula can contribute significantly to the training both of world citizens in a democracy and of professionals in international work.

The report cites examples of international applications of geography in business; in planning for economic, urban, and regional development; and in government service.

Finally, the committee asserts that in today's highly interdependent world a liberal education should develop in each individual the realization that his or her own country, region, and ethnic, religious, social, or linguistic group are but one among many, each with differing characteristics, and that other countries, regions, or social groups are not necessarily inferior or superior, and that one cannot see one's own country and culture in perspective until he or she has studied other lands and countries. Geography has a key role in developing such an understanding.

Members of the committee that prepared the report were Chauncy D. Harris, Samuel N. Harper Distinguished Service Professor of Geography and Director, Center for International Studies, The University of Chicago, chair; Harm J. de Blij, Professor of Geography, University of Miami; Norton S. Ginsburg, Executive Secretary, Norman Wait Harris Foundation in International Relations, The University of Chicago; Clarissa T. Kimber, Professor of Geography, Texas A & M University; Salvatore J. Natoli, Educational Affairs Director, Association of American Geographers; and Philip W. Porter, Professor of Geography and Director, Office of International Programs, University of Minnesota.

TABLE OF CONTENTS

Foreword	iii
Summary	v
I. Introduction	1
II. International Characteristics of Geography	4
1. Environment and Society	4
2. Maps and Location	5
3. Realms and Regions	12
4. Spatial Interaction	13
5. Global Perspectives	10
III. Contributions of Geographic Curricula to International Studies	16
1. World Citizens in a Democratic Society	18
2. Professionals in International Work	19
IV. Some International Applications of Geography	20
1. International Applications of Geography in Business	20
2. Geography in Planning for Economic, Urban, and Regional Development	21
3. Government Service in International Fields	23
V. Concluding Statement: Geography in Liberal Education	24

LIST OF ILLUSTRATIONS

Figure 1. Route of the hostages, January 20, 1981 (two-point equidistant projection aligned on Washington, D.C. and Tehran)	7
Figure 2. Azimuthal equidistant projection centered on Moscow, USSR	8
Figure 3. Azimuthal equidistant projection centered on Beijing (Peking), People's Republic of China	9
Figure 4. Azimuthal equidistant projection centered on Washington, D.C.	10
Figure 5. Population in relation to rainfall, East Africa	11

GEOGRAPHY AND INTERNATIONAL KNOWLEDGE

I. Introduction

In 1921 the geographer Isaiah Bowman, who advised President Woodrow Wilson on new national boundaries after World War I, published a magisterial survey of the problems of his time and called it *The New World*. Today we also face a new world, as will each succeeding generation.

Now we can see the terrestrial globe as a unit and recall Archibald MacLeish's words describing the famous photograph taken by the Apollo VIII mission—the earth with the moon's cratered surface across the foreground (cover): "To see the earth as we now see it, small and blue and beautiful in that eternal silence where it floats, is to see ourselves as riders on the earth together . . ."¹

We can now capture the unity and the limitations of our earthly home in such phrases as "One World," "Planet Earth," and "Spaceship Earth." But the surface of this earth, our home, our source of food and energy, and the site of our economic and social activities, is limited and fragile. The earth's resources are finite and the environment is easily degraded and polluted. Our activities upset ecological balances at peril to our future. At the same time science and technology enlarge the available resources. In many countries population is increasing at an alarming rate, is outstripping the pace of economic growth, and can endanger the area itself and neighboring areas as well. The highly localized nature of the world's energy resources poses many international problems.

The world has shrunk for communication and travel. Most areas are accessible within minutes by telephone and television can capture a crisis anywhere for millions of viewers in many lands. Jet aircraft connect most cities on all continents within almost twenty-four hours.

Yet the world is also fragmented. More than 150 countries are now members of the United Nations and the number continues to grow. Race, religion, language, nationalism, ideologies, and rivalries separate people from one another.

Now more than ever, citizens of the United States and of other countries cannot be ignorant of the world, its nature, its divisions, its interrelations, and its problems. Nevertheless, American ignorance about the world persists and has been reported at great length in the press and in educational journals over the past several years. Several recent

1. Archibald MacLeish, *Riders on the Earth* (Boston: Houghton Mifflin Co., 1978), p. xiv.

studies among Americans have documented their lack of foreign language proficiency, knowledge about other cultures, and understanding about important international relationships.²

We might ask why our nation's educational system has failed to educate its citizens about other nations, their languages, and their cultures. In a 1980 survey by the Educational Testing Service, only twenty-eight percent of college seniors could correctly identify a curve representing the world's past and probable future consumption of fossil fuels, such as petroleum, natural gas, and coal. Although the standard of living of the United States depends upon the supply of these sources of energy, only twenty-nine percent could recognize the member nations of the Organization of Petroleum Exporting Countries (OPEC), the organization largely responsible for the recent dramatic increases in the price of gasoline. Only twenty-four percent could properly distinguish a basic cause of the great global problem of inadequate nutrition.³ A study of eighth-grade students in the United States found that only thirty-five percent could correctly identify Egypt on a map and only thirty-one percent could identify the United Kingdom.⁴

Along with reports on the inadequacy of American education to deal with global problems at many levels—diplomatic, commercial, industrial, scientific, cultural, and educational—came a string of sobering

2. *A Survey of Global Understanding* (Princeton, New Jersey: Educational Testing Service, 1980); The President's Commission on Foreign Language and International Studies, *Strength through Wisdom: A Critique of U.S. Capability* (Washington, D.C.: U.S. Government Printing Office, 1979); *President's Commission on Foreign Language and International Studies: Background Papers and Studies* (Washington, D.C.: U.S. Government Printing Office, 1979); *New Directions in International Education*, *The Annals of the Academy of Political and Social Science*, May 1980; Barbara B. Burn, *Expanding the International Dimension of Higher Education* (San Francisco: Jossey-Bass Publishers, 1980), a report prepared for the Carnegie Council on Policy Studies in Higher Education; and Paul Simon, *The Tongue-Tied American: Confronting the Foreign Language Crisis* (New York: Continuum, 1980).

3. Thomas S. Barrows, Stephen F. Klein, and John L.D. Clark, *What College Students Know and Believe About Their World*, synopsis by Nathaniel Hartshorne (New Rochelle, New York: Change Magazine Press, 1981), pp. 18-19, 22.

4. Robert N. Saveland, ed., *Place Vocabulary Research Project, A Report to the Commission on Education of the International Geographical Union* (Athens, Georgia: University of Georgia, Geography Curriculum Project, 1980).

documents on the urgency of many international problems.⁵ Such reports as *North-South: A Program for Survival*, *Overcoming World Hunger*, and *Global 2000*, all published in 1980, point to increasing conflict among nations, the specter of future mass starvation, floods of refugees, greater food instability and dependency, monetary crises, and an intensifying struggle for control of renewable and non-renewable natural resources. Standing over it all, of course, is the apocalyptic threat of the incineration of humankind in the nuclear fireball.

People cannot resolve such problems without knowing the facts and understanding their meaning. Geography can contribute to an informed world view and thus to a favorable international climate for the peaceful settlement of disputes and for productive measures to ameliorate many world problems.

Perhaps no one has contributed more than novelist James A. Michener to helping us understand a number of foreign cultures and countries, and he has emphasized the role of geography in this understanding:

The more I work in the social studies field the more convinced I become that geography is the foundation of all. . . . When I begin work on a new area . . . I invariably start with the best geography I can find. . . . I need to ground myself in the fundamentals which have governed and in a sense limited human development. . . . The virtue of the geographical approach is that it forces the reader to relate man to his environment. It forestalls loose generalization founded mainly on good intentions or hope. It gives a solid footing to speculation and it reminds the reader that he is dealing with real human beings who are just as circumscribed as he. . . . With the growing emphasis on ecology and related problems of the environment, geography will undoubtedly grow in importance and relevance. . . . I suppose that my books on Hawaii, Israel and Spain have won a rather wide readership primarily because my work in the geography of these areas—really minute field work carried on over periods of many years—has provided a solid tactile base for what I had to say. My characters were not drifting in space; they were rooted in the ground.⁶

5. *North-South: A Program for Survival*, The Report of the Independent Commission on International Development Issues under the Chairmanship of Willy Brandt (Cambridge, Mass.: The MIT Press, 1980); *Presidential Commission on World Hunger, Overcoming World Hunger: The Challenge Ahead* (Washington, D.C.: U.S. Government Printing Office, 1980); *The World Bank, World Development Report* (Washington, D.C.: The World Bank, 1980); and *The Global 2000 Report to the President: Entering the Twenty-First Century*, 3 vols. (Washington, D.C.: U.S. Government Printing Office, 1980).

6. James A. Michener, "The Mature Social Studies Teacher," *Social Education*, November 1970, pp. 764-765.

II. International Characteristics of Geography

Geography illuminates many aspects of the world in which we live, and it can make strong and necessary contributions to international knowledge. Some particular contributions of the discipline follow:

A. *Geography clarifies the interrelationships and associations in and among specific habitats on the face of the globe because it deals with the totality of human-land relations that require knowledge of natural resources and their physical and biological environments on one hand, and of societies, cultures, and economies on the other.*

B. *Geography portrays location and its significance on thematic maps that show more accurately than any other portrayal the important relationships to other places. These powerful tools clarify many important and fundamental relationships.*

C. *Geography focuses on how constituent parts of the world differ from one another in their associated resources, cultures, and economies. Through regional geography we can develop an appreciation of the rich diversity of the world and the reasons for differences among countries and regions.*

D. *Geography studies how commodities, capital, ideas, and political influences move between and among nations. Geography thereby demonstrates how distances, routes, and transport modes influence the relations among countries of the world.*

E. *Geography views the earth as a unit and puts individual countries, regions, and problems in a world context.*

1. Environment and Society

Geography is unusual among social sciences, and among the sciences generally, in its concern with the interconnections between the environment and society, and between resources and the economy. Geographers regard the bio-physical realm as equal to the nation-state in the ways nations conduct their daily affairs. The anthropologist Robert H. Lowie saw clearly the importance of natural conditions for culture: "Everything that contributes to our insight into the conditions offered by nature deepens our insights into the character of culture."⁷

Because nations and their people gather, modify, and exchange resources within and among the world's patterns of human settlement, geographers use these patterns as a basic context for study. Locations

7. Robert H. Lowie, *The History of Ethnological Theory* (New York: Farrar and Rinehart, 1937), pp. 261-262.

of resources and other phenomena are matters of profound importance within the framework of human settlements. Significant also are the people's perceptions of resources they use to fashion a livelihood, and these resources include both natural features and the accumulated physical and cultural structures.

Geographers, in studying the interrelationships of environment and society, draw upon their own field observations and on the findings of other physical and social scientists to create an integrated understanding of the environment used by human groups. Through field investigations and case studies geographers can both perceive and demonstrate how a place functions, whether it be a ranch, a coffee estate, a village, an urban "commuter field," or larger parts of the earth, such as provinces or nations.

Geographers are also alert to economic and social relationships that extend beyond the immediate area where environment and society interact. If sheep are overgrazing certain areas of Iran, it may be because there is a large market for karakul coats in Europe and the prices for the skins are high, rather than any inherent local imbalance between stock-keeping and pasturage. Local circumstances alone can seldom explain the human use of environment and environment-society interrelationships in a place. In studying the environment and society, geographers constantly discover and follow threads of connection that link people and places everywhere.

2. Maps and Location

The geographer is expert in constructing and using maps that depict locations and distributions. The map itself serves as a concrete example of how different the world looks from different angles. It is important to note that each country sees the world from the viewpoint of its own location, history, economy, and culture.

A map is *not* scenery; it is not a decoration to be hung on the wall behind the news announcer or placed on book covers. The map is a tool that helps each of us gain a concrete understanding of relationships that places have with other places and the relationships that societies have with environment and resources.

Yet we receive constant reminders of how ignorance and wisdom coexist. The *North-South* (or Brandt Commission) report contains much that is perceptive, useful, and well-reasoned. Nevertheless, the map chosen for its cover, land in bright red with a black boundary dividing countries of the "North" from those of the "South," leaves much to be desired. Inside the cover is the following statement: "The map on the front cover is based upon the Peters Projection rather than the more familiar Mercator Projection." It then claims that the "projection represents an important step away from the prevailing Eurocentric geographical and cultural concept of the world." But this projection is neither more nor less Eurocentric than Mercator's, nor is any other. Mapmakers can put any place at the center of the world.

Since the earth is a sphere, no flat map can depict at the same time true areas, true angles or directions, true distances, and true shapes. Only a globe can accurately show them all at once. In a flat map one must choose which quality is important for a specific purpose, either for the whole world or for parts of it. Once the purpose is clear, the geographer or cartographer can select or design the projection that best serves this purpose.

The map, as a visual device, appeals to our mind's need to integrate and to synthesize knowledge. Its value is that it says things to us in a different, non-verbal way. It tells us things we cannot know in other ways, and it does it all with amazing economy.

The marriage of computer technology with map generation has made it possible for maps to illustrate particular points and with minimal delay and cost.⁸ For example, Figure 1 was generated and posted in one geography department within one hour of the announcement of the release of the American hostages being held in Iran. In real time one could trace their path as they returned to the United States over several days in January 1981.

The azimuthal equidistant projection shows true direction, distance, and path from one place on the globe to other places and presents one picture of accessibility of the world to the given center. Figure 2 presents the world as seen from Moscow. The map shows the distance and shortest route over land and water surfaces one would follow in a direct flight from Moscow to other parts of the globe. North America lies on the other side of Scandinavia and Greenland. Figure 3 presents the world as seen from Beijing (Peking) with Japan and mainland Asia nearby, and the United States beyond Siberia, Alaska, and Canada. Figure 4 shows the world in relation to Washington, D.C. Leaders of the Soviet Union, China, and the United States see the world from very different angles, physically as well as politically.

Maps are major tools for understanding many types of relationships in specific places. Figure 5 portrays vividly the high degree of concentration of population in three countries of East Africa: Kenya, Tanzania, and Uganda. This map poses a major question: Why is the distribution of population so very irregular, with heavy concentrations in some areas separated by vast thinly populated stretches? Without the map we may not be sufficiently aware of the concentration or be inspired to study the relationship with other phenomena, such as the role of farm size and economic viability, land ownership, population pressure, agricultural productivity, and particularly the amount of rainfall.

The World Bank has introduced a new type of map based on LANDSAT images. These maps depict land cover or land use and serve as geo-data

8. The authors wish to express their appreciation to Philip M. Voxland, Director, Social Sciences Research Facilities Center, University of Minnesota, for compiling Figures 1-4.



Figure 1.
JANUARY 20, 1981 -- ROUTE OF THE HOSTAGES
TWO-POINT EQUIDISTANT PROJECTION
ALIGNED ON WASHINGTON AND TEHRAN

BEST COPY AVAILABLE

-8-



Figure 2. Azimuthal equidistant projection centered on Moscow, USSR

BEST COPY AVAILABLE

-9-



Figure 3. Azimuthal equidistant projection centered on Beijing (Peking), People's Republic of China



Figure 4. Azimuthal equidistant projection centered on Washington, D.C.

BEST COPY AVAILABLE

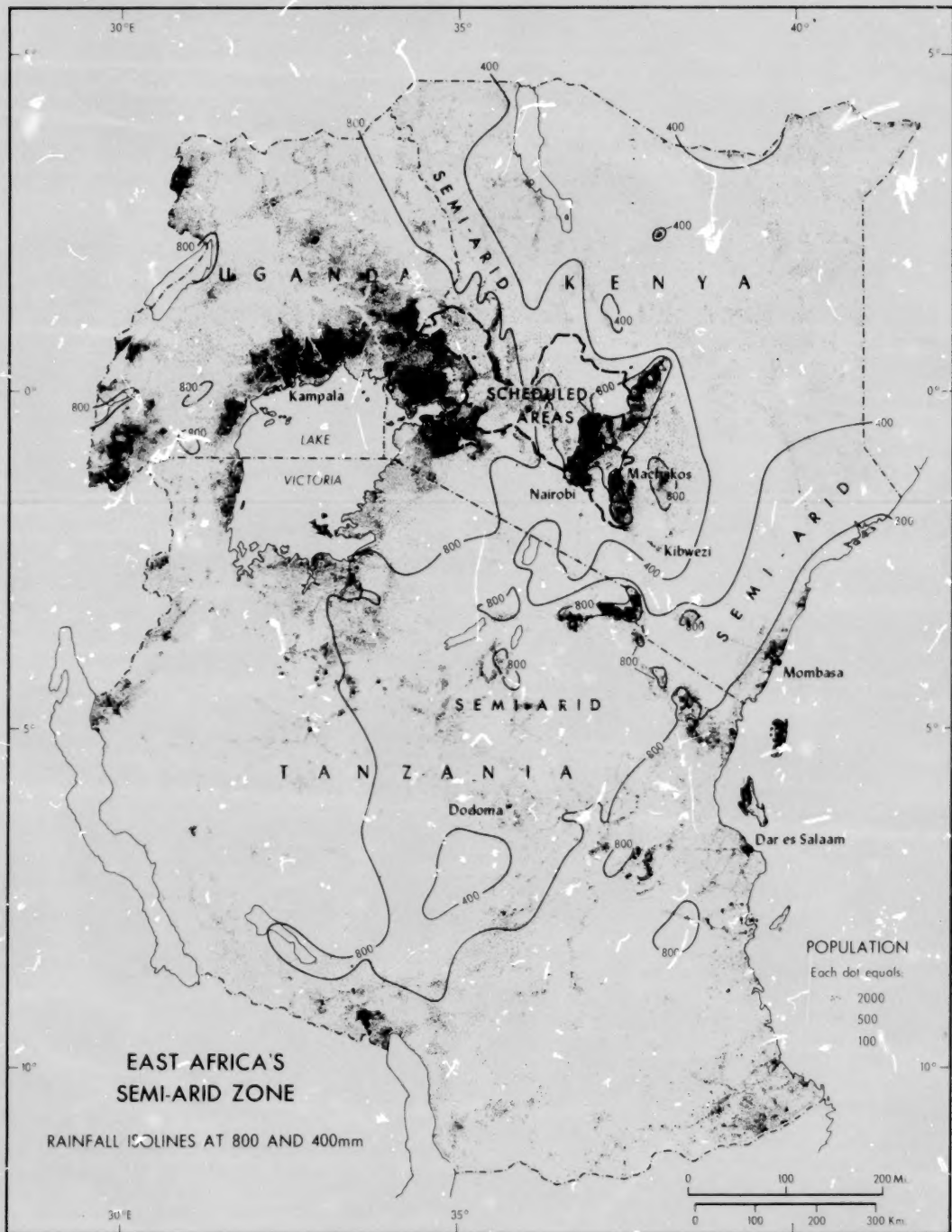


Figure 5. Population in relation to rainfall, East Africa

bases for regional planning. They are inexpensive and quick to produce compared with maps compiled in traditional ways and are especially valuable in providing information in cartographic form for many overseas areas that are poorly mapped. The World Bank has produced such maps for the state of Orissa in India, for Nepal, and for Bangladesh.⁹

Maps such as these pose serious questions about the relationships among peoples, among countries, and between environment and society. The essential point is that the map is a multi-faceted tool. A thorough knowledge of its versatility can help us gain a correspondingly thorough knowledge and understanding of our world.

3. Realms and Regions

From maps, which depict location, relative position, and associated phenomena, it is logical to consider another key concept in geography: the region, which integrates in a specific area the diverse physical and human phenomena that vary markedly in their distribution and expression on the surface of the earth.

Regional geography courses have long been a cornerstone of undergraduate geographic education, and the idea that one might become an "area specialist" often is born in classes of this kind. At the introductory level these tend to take the form of comprehensive "world regional" overviews, in which students gain a broad, highly generalized perspective on the great geographic realms. At upper levels such courses focus upon individual realms, such as Southeast Asia or Africa South of the Sahara, and their characteristics.

The regional tradition of geography contributes enormously to a better understanding of the world by students whose education otherwise includes only limited systematic study of foreign areas. Classical regional geography has among its merits the integration of information about environments as well as societies, so that students can begin to comprehend the ways that people with different cultures and in various environments organize themselves and their activities spatially. A sizeable and distinguished literature reflects this preoccupation.

Periods of intense intellectual ferment have often stirred geography. During the 1950s and 1960s, regional geography underwent intense examination and to some extent geographers diverted attention and energies

9. International Bank for Reconstruction and Development, Agriculture and Rural Development Department, Economic and Resource Division, *Orissa, India, Land Cover—Land Use Association*, 1:1,000,000 (Washington, D.C.: International Bank for Reconstruction and Development, 1977); idem, Resources Planning Unit, *Nepal*, 2 sheets, 1:500,000 (Washington, D.C.: The World Bank, 1980); and idem, *Bangladesh, Landuse Classification Related to Landcover Reflections Obtained from Landsat Imagery*, map 2, 1:500,000 (Washington, D.C.: The World Bank, 1981).

to other subfields of geography.¹⁰ Geographers questioned whether possible ethnocentrism colored their studies or whether long-held generalizations were still valid. As courses in regional geography were curtailed, thousands of students lost the opportunity to turn to it for a spatial orientation to the world realms in which they might be developing an interest.

The intense examination of regional geography's content and philosophy resulted in some positive changes: increasing the emphasis on field work, improving language competency, and establishing stronger affiliations with area programs. The reinvigorated regional geography emerged unmatched as a vehicle to convey world understanding. The fundamental world-regional framework that identifies major geographic realms continues to constitute a powerful pedagogic device. Regional studies confirm essential homogeneities and highlight internal diversities; they can be based effectively upon a prodigious array of both topical and sub-regional studies done by geographers in the field. Regional geography examines dominant as well as exceptional environments at various scales; it affords opportunities for comparative study (for example, of cultural adaptation to similar environments in widely separated areas of the world); it is surely the most relevant approach to problems of resource distribution and consumption; it provides insights into the forces behind the location of economic activities; and it creates a substantive background for any understanding of spatial-political accommodation. Primarily, however, regional geography reveals that, in a world of change and interaction, traditions remain strong, cultural landscapes remain entrenched, livelihoods and lifestyles retain their distinctions, and attitudes and values often differ sharply from those held in the United States.

Regional geography can also contribute to international studies in the abstract, by developing an appreciation and respectful understanding of the achievements and problems of societies and cultures other than one's own. Comprehending crucial aspects of the historic development, but more relevantly, of the spatial legacy of colonialism in Africa is fundamental to assessing the obstacles to future development faced by African states. The regional configurations defined by the federal map of India can be appreciated no better than through a geographical view of India's internal diversity.

4. Spatial Interaction

It is hardly necessary to underscore the interconnectedness of the modern world, but in the context of international education it is appropriate to emphasize geography's long-term concern with "spatial interaction."

10. Commission on College Geography, *Introductory Geography—Viewpoints and Themes*, CCC General Series, no. 5 (Washington, D.C.: Association of American Geographers, 1967).

The study of spatial interaction involves analyzing flows, interdependence, underlying structures, and actual and potential scarcity of resources. Resource location and movement is central to understanding even the broadest outlines of interactivity networks. The geography of energy, in an international context, is the geography of highly localized resources, of vulnerable pipelines, narrow straits, and great distances between producing and consuming areas, of increasingly inaccessible reserves, of sharp differences in cultures, economies, and policies, as well as of the patterns of production and consumption.

An intricate structure of relationships exists among participants in international trade, a structure that is under stress from various directions. In the United States partial dependence upon imported oil is currently a primary concern: policy mistakes (made in ignorance of political and cultural realities in foreign areas) have especially serious consequences. The United States also imports large quantities of strategic minerals, some of them from areas undergoing major political-ideological change (Zimbabwe, Namibia). Again, the geographic perspective is crucial, relating economic matters to political, ideological, and spatial ones.

Geographic manifestations of world interaction include not only the movement of fuels, minerals, and manufactured products but also the production and distribution of food (like energy, a potential strategic weapon), the development of a variety of international alliances and blocs, the extension of national jurisdiction over maritime areas, the growing international competition in the Antarctic, and the changing functions of international political boundaries. The slogan, "a bushel for a barrel," widely voiced during the frustrations of the energy crisis of the early 1970s, oversimplifies a dangerous and one-sided (i.e., non-geographic) view of world production. The ideas behind such a slogan erroneously limit the alternatives available to OPEC countries not only for selling their petroleum but also for importing food. Above-average grain harvests in exporting countries such as Argentina and Australia can dramatically minimize the impact of food as an American political instrument. A geographic perspective is necessary to understand correctly the long-term global food distribution systems.

The rising pressure on known and accessible natural resources has opened an era of seabed exploration and exploitation that is changing both the economic and political world map. The North Sea has virtually become occupied territory, studded by oil-drilling platforms and crossed by an expanding network of pipelines. In effect, the political map of Western Europe is being redrawn as Norway's boundary with the United Kingdom on the continental shelf takes on a significance comparable to its land boundary with Sweden. The seaward rush has extended maritime jurisdictions so that a worldwide, 200-mile Exclusive Economic Zone is about to make its appearance, possibly a forerunner of 200-mile maritime sovereignties. Already a further step—the mid-ocean median line—has been mooted. This comparatively quiet territorial transformation is now extending into the Antarctic, where national claims (in abeyance since the signing of the Antarctic Treaty) may soon renew their appearance on land as well as at sea. Unchecked exploitation of maritime fauna in

Antarctic seas may disturb and endanger marine food webs throughout the world.

The formation of groups of states is transforming the world map. The concept of international associations for cooperative purposes is not new, but the number and types of blocs, unions, alliances, and other international organizations is unprecedented. The geography of supranationalism reveals changing realms of the world, resulting in large measure from interstate economic, political, cultural, and strategic associations. One significant result involves the changing functions of certain international boundaries. Thus political boundaries within international blocs tend to display functional decline, whereas boundaries between blocs become more divisive (and are often marked by barriers against movement). States acting in unison, such as the Association of South East Asian Nations (ASEAN), can have far-reaching effects on international affairs. A Nigeria-led Organization of African Unity (OAU) may yet pose a more powerful challenge to South Africa than might any individual or front-line group of states. International organizations extend the "reach" of strong states and augment the position of less influential countries; they constitute a growing element in global interaction.

World interaction affects everyone. A frost in Brazil raises coffee prices in the United States; a strike in Africa's Copperbelt affects American metal producers. A poor wheat harvest in the United States and Canada threatens the hungry of South Asia and may reduce the quality of the diet in the Soviet Union. A host of geographic studies of such relationships give proof of the discipline's usefulness in this aspect of international education.

5. Global Perspectives

Geographers are not only trained in working with a global scale, but are also comfortable in such work. According to the National Council for the Social Studies, "Global education refers to efforts to cultivate in young people a perspective of the world which emphasizes the interconnections among cultures, species, and the planet. The purpose of global education is to develop in youth the knowledge, skills, and attitudes needed to live effectively in a world possessing limited natural resources and characterized by ethnic diversity, cultural pluralism, and increasing interdependence."¹¹ Geographic learning is essential to global education.

Of all the social and natural sciences, geography has perhaps the strongest international, global tradition. This results in part from the early roles of geographers as explorers and cartographers, and it has been sustained through the discipline's twentieth-century modernizations. The relationships between human societies and natural environments were first studied at global scales, and from these speculative efforts there developed the clear need for greater objectivity through measurement and

11. *The Social Studies Professional*, 59 (May 1981):5.

classification. World climatic, pedologic, and biotic schemata evolved from these early regionalizations, and these have been revised and refined numerous times. Students thus acquire a global functional-regional overview at the outset of their undergraduate education, because virtually every introductory sequence (whether physical or human geography) incorporates a world perspective.

Geography has benefited from a number of long-continuing discussions arising from global assessments. Models and theories developed from localized data are tested in broader context.¹² These ideas were—and continue to be—studied not only as theoretical constructs but also for their illumination of the world at large.

Geography's global perspective continues in upper-level education as well as in introductory studies. The systematic subfields of geography (whether political, cultural, economic, medical, urban, or agricultural) place their subject matter in an international context, thus promoting global communication and understanding. Professional geographers working in international spheres have been trained in both regional and topical fields of specialization. A cadre of university and college faculty with experience in foreign areas exists with considerable international experience and with knowledge of one or more foreign languages. During the 1960s, when international studies centers and programs emerged in many institutions of higher learning, this international tradition of geography proved a valuable asset. It is an asset to be exploited again in a time when international understanding must be strengthened in both the pre-college and the college curricula.

III. Contributions of Geographic Curricula to International Studies

Developing a world citizenship perspective is a major goal of educational institutions in a global age.¹³ The rest of the world

12. J.H. von Thünen's nineteenth-century agricultural model, for example, was based on a single, market-oriented estate in Germany but proved applicable at regional and even global levels. Among its leading merits is its provision of an organizational framework for learning. Certainly the wider applications of the von Thünen model are subject to discussion, and this discussion is itself instructive. Sir Halford Mackinder's "Heartland Theory" published in 1904 initiated a debate that has continued to this day. Ellsworth Huntington's environmentalism of the first half of the twentieth century produced counterarguments in a lengthy debate recently joined by sociobiologists. William Morris Davis's concept of a peneplanation process provided a universal for physical geography, and led to significant field research in many areas of the world. Walter Christaller's location theory sought spatial order in the relative position of central places in Germany but its regularities have been observed also in China.

13. Lee Anderson and James Becker, "Global Perspectives in the Social Studies," *Journal of Research and Development in Education*, 13, no. 2 (Winter 1930):1.

increasingly affects the lives of Americans as the behaviors of Americans affect other nationalities. Decisions and behaviors of one group have both transnational and transgenerational consequences. A well-educated person needs to make judgments in managing cultural diversity and change; managing human-environment relations; managing population growth and the inequities in the distribution of well-being, power, and safety; and managing conflict and violence.¹⁴ Geographic education contributes heavily to the ability to make such judgments.

The Council on Learning, as part of its project on Education and the World View, commissioned the Educational Testing Service to conduct a Survey of Global Understanding with a nationally representative random sample of 3,000 undergraduate students at 185 colleges and universities in the United States.¹⁵ Although an interdisciplinary committee developed the survey, it nevertheless contained a large amount of what geographers teach in college courses.¹⁶ Yet the survey revealed that college seniors averaged only half a geography course per student and that sixty percent of the students had taken no college geography courses. The entire student sample (equally composed of two-year college students and freshmen and seniors in four-year institutions) averaged only forty-three percent correct answers on a global understanding test and seniors alone scored only fifty percent correct, not a particularly satisfying result.¹⁷ A clear need exists for a more substantial role for geography in the curriculum of American schools and colleges.

As The Atlantic Council of the United States observed: "The work of the President's Commission on Foreign Language and International Studies, and surveys by the former Office of Education, the Educational Testing Service, the Council on Learning, and others have all revealed a frightening degree of ignorance, even on the parts of university and graduate students, of the contemporary world around us. They have revealed grave deficiencies in knowledge of geography, any foreign language, basic political science, economics, and modern history, especially recent history which bears so heavily upon the coming years."¹⁸ And the report

14. Charles W. Merrifield, "Development Ethics: A Functionalist View" (Paper delivered at the International Studies Association-West meeting, Portland, Oregon, March 1979).

15. Thomas S. Barrows, et al., *College Students' Knowledge and Beliefs: A Survey of Global Understanding*, The Final Report of the Global Understanding Project, Educational Testing Service (New Rochelle, New York: Change Magazine Press, 1981).

16. A. David Hill, "A Survey of Global Understanding of American College Students: A Report to Geographers," *The Professional Geographer*, 33, no. 2 (May 1981):237-245.

17. Ibid., p. 239.

18. The Atlantic Council's Working Group on the Successor Generation, *The Successor Generation: Its Challenges and Responsibilities* (Washington, D.C.: The Atlantic Council of the United States, 1981), p. 13.

continues, "There is unnecessary ignorance of geography."¹⁹

John W. Studebaker, former United States Commissioner of Education, some years ago recommended that "throughout the secondary schools and in the colleges and universities a real emphasis now be laid upon acquainting the American citizens with the realities of the world through intensive courses in world geography."²⁰

Geographic education contributes toward preparing students for two overlapping roles: as world citizens in a democratic society and as professionals trained for international work.²¹

1. World Citizens in a Democratic Society

A great number of societies compose the population of the world. The societies differ from one another in attitudes, cultures, policies, economies, and technologies, exist in a variety of bio-physical environments, and have varied interconnections. These important differences have evolved as the products of adaptation to physical, cultural, and social environments, of the diffusion of ideas and artifacts, of the mingling of peoples, and of independent invention. The human environments created and occupied by these societies are the result of both historical experiences in place and past migrations. Recognizing the historical reasons for certain events can make these events both more intelligible²² and less threatening. Much political extremism derives from ignorance of things foreign.

Courses in cultural, social, and historical geography provide the background for thinking comparatively and for understanding more deeply the processes that lead to regional differentiation. Regional courses that concentrate on a particular cultural realm, such as Latin America or the Mediterranean world, provide a substantive introduction to setting societies in their landscapes and the cultural, physical, and social systems functioning there. Experience shows that even one good course can provide students with new perspectives and deep insights.

19. Ibid., p. 17.

20. "Dr. Studebaker Calls for Geography," *NCGE Perspective* (Newsletter of the National Council for Geographic Education) 9, no. 5 (June 1981):6. The address was delivered at a National Conference of College and University Presidents, Baltimore, Maryland, 3-4 March 1942.

21. International Geographical Union, Commission on Geographic Education, "Outline of Structure for the Handbook for Teachers on Implementing the Recommendation on Education for International Understanding, Cooperation, and Peace, and Education Relating to Human Rights and Fundamental Freedoms" (Mimeographed for the meeting for planning the Handbook, 8 December 1979), p. 3.

22. Roger Scruton, "Humane Education," *American Scholar*, 49, no. 4 (1980):498.

The world's nations have become increasingly interdependent because limited and unevenly distributed resources mandate trade among nations. When supplies of some resources diminish, societies must select alternate resources in order to maintain standards of living. Changes in resource supply require internal shifts in labor organization, work sites, and even the capacity to do certain types of work. As a consequence, trading patterns among nations may shift and political alliances may change. Thus, the overall phenomenon of interdependency remains, although individual dependencies may change.

Studies in physical geography cast light on the causes of interdependency and explain its occurrence by addressing the distribution of the earth's physical and biological phenomena. Economic geography, transportation geography, spatial analysis, studies of resource use and management, and urban geography contribute further to understanding interdependence among nations and can also develop a sense of stewardship in the human use of the earth.

As the geographic scale of observation changes, so do perspectives. Controls on phenomena operating at local scales fade into insignificance when examined at global scales, whereas other correlations and interdependencies become evident. The advancing desert of the southern Sahara can decimate an entire nation's pastoral economy because these small nations on the Saharan border are already precariously close to being entirely desert. In larger nations, such a condition could be offset by the productivity of other humid areas within the nation's boundaries. Students gain practical experience in scale-change in cartography and in field courses and develop map-reading skills in geographic techniques courses as well as in work associated with regional study.

Field work heightens appreciation of concrete realities and of problems with data, cultivates the development of techniques for systematically acquiring otherwise unavailable data, makes the student aware of the magnitude of the problem of compiling data, especially in the underdeveloped world, and reveals the limitations of existing data bases. Field work also focuses attention on mistakes that inevitably result from arbitrary decisions in classification. Indeed, field training can develop a healthy skepticism toward all published data. Extended field work abroad gives advanced students experience as aliens in exotic cultural and physical environments. The sense of "otherness" can provide students with the background for tolerating diversity as they meet people who hold value systems different from their own and who behave with different motivations. Students can be comfortable in dealing with people in other cultures without feeling compelled to imitate them.

2. Professionals in International Work

Geography is a necessary ingredient for training professionals to work abroad or with foreign nationals, or in other words, for all those engaged in international work. The study of geography and other social sciences can help professionals to develop an understanding of the perceptions, world views, and value systems of other peoples of the world.

Americans need to know how other peoples perceive us and our behavior toward the rest of the world must include this knowledge. Other societies behave differently than we do and their behavior results from their value systems. Because a nation's foreign policy derives fundamentally from its value system, it must consider how geosystems, biosystems, and cultural systems relate to ecological constraints. Economic strategists must know about resources and must recognize that those resources are products of cultural definition. Skills in air photo interpretation, remote sensing, topographic and thematic mapping, and courses in physical and economic geography and resource management help develop the ability to assess the resource base. Behavioral and social geography courses provide the tools to understand how perceptions, world views, and value systems affect the human use of resources.

IV. Some International Applications of Geography

Geography is integral to effective international affairs. The products of geographic research can improve international business negotiations, supply needed dimensions in planning for economic, urban, and regional development throughout the world, and prepare individuals for government service abroad.

1. International Applications of Geography in Business

As many of the devastated countries recovered after World War II, the premier position of the United States became increasingly sensitive to competition from the international business ventures of other highly industrialized nations. These nations have challenged the virtual American monopolies in the automobile, electronics, chemical, and other highly technological information industries. Foreign manufacturers have reduced American comparative advantage by aggressive marketing initiatives and by sending business representatives abroad who are well versed in the cultures and languages of the countries they visit.²³ It would be erroneous to attribute the decline in the United States market share of overseas business solely to our inadequate foreign language capabilities or our limited geographical knowledge of other regions. Yet many corporate executives see these inadequacies as important factors in weakening American business performance in other countries.

Business executives have called upon universities to develop programs in international trade and business that would include such subjects as location theory, transportation systems, regional geography, and spatial problems of multinational operations, as well as the requisite training for business managers in marketing, economic analysis, finance, and management. To illustrate, the Department of Geography of the State University of New York at Buffalo, in cooperation with the School of Management, has developed two programs that fill this need. One program

23. The President's Commission on Foreign Language and International Studies, *Strength through Wisdom*, p. 7.

provides for a concentration on the geography of world trade and international business within the M.A. program in geography. The degree recipient receives the M.A. in geography and a certificate in the International Trade Concentration. The other is a joint degree program of the Department of Geography and the School of Management. This program requires 75 hours of graduate study, six graduate-level hours of a foreign language, and many management courses. Graduates of the program receive an M.B.A. and an M.A. in geography with International Trade Certification. Both programs require an internship with a firm engaged in international trade.

According to James E. McConnell, professor of geography and coordinator of the International Trade Concentration at the State University of New York at Buffalo, the response to the program is encouraging, and local corporations request graduate interns to help them with a variety of problems. The international business community has offered regular fellowship monies to support the program and also supplies guest lecturers. McConnell gauges the success of the program by the positive responses he has received: "We have evidence of people receiving promotions after having received the degree; we are placing people in jobs; we continue to receive financial and moral support from the Buffalo World Trade Association; and we are getting support from the Department and the Dean."²⁴ The department also has received many inquiries from other departments and institutions.

2. Geography in Planning for Economic, Urban, and Regional Development

Economic development, urbanization, and regional progress are closely interrelated and can be treated together.

The competent geographer has the ideas, tools, and experience to make substantial contributions to the understanding of the *economic development* process wherever it may occur. . . . In a very substantial sense, studies of the *economic development process* are studies of society as a whole, and to this study geography can be said to bring both a focus and a method. Underlying geographic study is the basic assumption that the localized association of phenomena is significant to society, and one way of dealing with social problems in the broadest sense, whether economic, political, or more narrowly cultural, is to study these localized associations as they occur in reality and are related to each other. Geographers are more apt, and perhaps better trained, to deal with those associations which have a direct and manifest relationship with the occupancy of the surface of the earth.²⁵

24. James E. McConnell to Salvatore J. Natoli, 11 February 1981.

25. Norton S. Ginsburg, "Geographic Research Opportunities in the Field of Economic Development," *The Professional Geographer*, 5, no. 4 (July 1953):13, emphasis added. See also Norton Ginsburg, ed., *Essays on Geography and Economic Development*, Department of Geography, Research Paper No. 62 (Chicago: University of Chicago, 1969); and Norton Ginsburg, *Atlas of Economic Development* (Chicago: University of Chicago Press, 1961).

Implicit in Norton Ginsburg's statement is the understanding that economic development is both continuing and geographically specific, that it has both temporal and ecological dimensions. Wealth and poverty, concomitants of development, tend to be highly localized. This is true not only at the local scale, where associations of people, resources, and activities meld into distinctive mini-systems, but also at regional, national, and supra-national scales. The world map of economic development, whether based upon a conventional measure such as gross national product per capita or upon some more complex synthesis of social and economic variables, displays a distinctive and variegated pattern, but that pattern is a far cry from the oversimplified thinking that partitions the globe into a so-called "North" and a so-called "South." At the national scale, too, the developmental maps of India and China, for example, display similar variety, which reflects territorial differences in developmental process and attainment. Indeed, the distribution of wealth and poverty in the United States itself is geographically distinctive. Rather than "one nation indivisible," this country has marked regional differences in wealth; and Appalachia, the Indian reservations, resource-poor areas with limited accessibility, and the slums of many northeastern cities stand out sharply as the backward areas of the most highly developed and wealthiest country on earth.

Such differences in development, wealth, poverty, and welfare require both description and explanation. Explanation in turn requires sophisticated conceptual and technical tools of spatial and non-spatial analysis. Both in their research and in their capacities as consultants and advisors, geographers have amply demonstrated their capacity for dealing with the complex issues that bear upon the wealth of nations and the internal variations within them, one of the great domestic and international problems of our time.

Economic development invariably is associated with a world-wide process of societal transformation from rural to urban, a process involving shifts in occupational structure, greater areal specialization and interdependence, and higher income levels. Geographers have made many contributions studying the genesis and evolution of this process in the past and to planning for its future. Geographers have studied, for example, the development of areas of supply for the city, city-centered market areas, complex urban networks, interactions among cities, basic and non-basic components in the support of the city, land use, the city in relation to resources and location, problems such as pollution, congestion, housing, and transportation, and growth poles in economic development and regional planning.

Careful geographical assessment of human and natural resources and the problems attendant on each of these is necessary for successful regional planning. Regional planning programs abound in both developed and underdeveloped nations, but it is among the latter that governments frequently call upon foreign experts and aid to formulate and implement programs for development. In assessing planning needs in the developing countries, geographical expertise is almost a prerequisite for effectively appraising and analyzing human and natural resource systems and for providing locational parameters to guide the planning process.

Wolfram Drewes, a geographer and senior resource planner with the World Bank, has written that geographers must deal with basic questions about the location and quantification of natural resources. Geographers help to delimit areas of need and to assess their feasibility for development, whether it be a small area, a larger functional region, or a river basin. Their knowledge of areas, and the societies and languages in those areas, helps them perform their portion of the regional planning effectively in consort with other development professionals.²⁶

The contributions that a geographer can make to economic development and to urban and regional planning can be illustrated by the work of Brian J.L. Berry in Indonesia, where he has helped guide the South Sumatra Regional Development Project, evaluate urban public works proposed for a third five-year plan with increasing emphasis on equity goals, and develop guidelines for a national urban development strategy for the fourth five-year plan. Professor Berry has written: "Whatever I provided that was creative and different in these ventures came from my background in geography: knowledge of regional systems, of the role of cartography in resource assessment and planning, of urban systems, and of urban geography. From geography, too, came an essential awareness of cultural differences."²⁷

3. Government Service in International Fields

By virtue of their training in identifying patterns of human activities as they relate to natural and cultural environments, and their intensive knowledge of foreign areas, geographers are well prepared for government service in international fields. The best-trained among them are those who have specialized in specific regions of the world and have well-developed foreign language skills, along with systematic specialties. Geographers have distinguished themselves in government service in many countries and will continue to do so. Others may not serve abroad ordinarily, but are employed in a number of Federal agencies that deal with foreign area assessment, such as the Department of State, the Department of Commerce, the Agency for International Development, the Central and Defense Intelligence Agencies, and the Department of Agriculture.

Many geographers have served on missions to advise nations on their development strategies, on local and regional development problems, or on specific problems such as urban planning, industrial location, water

26. Wolfram U. Drewes, "Applied Geography in the Development of Latin America as Part of the Third World," in *Studying Latin America: Essays in Honor of Preston E. James*, ed. David J. Robinson (Ann Arbor, Michigan: University Microfilms International for Department of Geography, Syracuse University, 1980), pp. 245-267.

27. Brian J.L. Berry to Harm J. de Blij, 2 March 1981. Professor Berry is Dean of the School of Urban and Public Affairs at Carnegie-Mellon University, Pittsburgh, Pennsylvania.

supply and transfer, irrigation projects, afforestation and reforestation, population redistribution, transportation, and responses to natural hazards. Others work in a variety of supporting occupations as cartographers, educational consultants, survey consultants, or special library program advisers.

V. Concluding Statement: Geography in Liberal Education

The Council on Learning's National Task Force on Education and the World View in its summary statement recommended a reemphasis in the secondary school curriculum on "social studies, history, *geography*, and foreign language arts," and for the college graduate "a deeper knowledge and understanding of another culture, as seen through its history, *geography*, language, literature, philosophy, economics, and politics."²⁸

In today's highly interdependent world a liberal education should develop in each individual the realization that his or her own country, region, or ethnic, religious, social, or linguistic group is but one among many, each with differing characteristics, and that other countries, regions, or social groups are not necessarily odd, irrational, or inferior. We may argue that one cannot see one's own country and culture in perspective until he or she has studied other lands and peoples. Only then can one understand that his or her own civilization is but one among a family of civilizations with common elements yet distinctive characteristics, evolving from common antecedents in different directions yet with much cultural borrowing, and facing similar problems yet with particular combinations of attitudes, policies, technologies, physical environments, and evolved economic systems.²⁹ Geography has a key role to play in developing such understanding.

28. Council on Learning, *Task Force Statement on Education and the World View* (New Rochelle, New York: Council on Learning, 1981), emphasis added.

29. Chauncy D. Harris, "The Geographic Study of Foreign Areas and Cultures in Liberal Education," in *Geography in Undergraduate Liberal Education*, A Report of the Geography in Liberal Education Project (Washington, D.C.: Association of American Geographers, 1965), p. 25.